

- mixing the boron carbide powder and the hafnium powder such as to obtain a homogeneous mixture, and

- sintering the homogeneous mixture at sufficient sintering pressure and temperature to obtain a composite material,

wherein the sintering pressure is applied before the temperature of the homogeneous mixture of the powders reaches the sinter reaction temperature of said mixture, and

wherein the mixture of boron carbide and hafnium powders is made by applying ultrasound to a paste containing said powders dispersed in a dispersion liquid.

Please cancel Claim 7.

Please amend Claims 9-11 as follows:

9. (Twice amended) Process for manufacturing a neutron absorbent material, said material being a composite material containing boron carbide and hafnium, comprising the following steps:

- adding hafnium powder to a powder of boron carbide,  
- mixing the boron carbide powder and the hafnium powder such as to obtain a homogeneous mixture, and  
- sintering the homogeneous mixture at sufficient sintering pressure and temperature to obtain a composite material,

wherein the sintering pressure is applied before the temperature of the homogeneous mixture of the powders reaches the sinter reaction temperature of said mixture, in which the homogeneous mixture is sintered in a graphite mould lined with a graphite sheet.

10. (Twice amended) Process for manufacturing a neutron absorbent material, said material being a composite material containing boron carbide and hafnium, comprising the following steps:

- adding hafnium powder to a powder of boron carbide,
- mixing the boron carbide powder and the hafnium powder such as to obtain a homogeneous mixture, and
- sintering the homogeneous mixture at sufficient sintering pressure and temperature to obtain a composite material,

wherein the sintering pressure is applied before the temperature of the homogeneous mixture of the powders reaches the sinter reaction temperature of said mixture, in which the mixture is sintered at a temperature of approximately 1800°C to 2100°C, at a pressure of around 70 to 110 MPa for a period of approximately 15 to 90 minutes.

11. (Twice amended) Process for manufacturing a neutron absorbent material, said material being a composite material containing boron carbide and hafnium, comprising the following steps:

- adding hafnium powder to a powder of boron carbide,
- mixing the boron carbide powder and the hafnium powder such as to obtain a homogeneous mixture, and
- sintering the homogeneous mixture at sufficient sintering pressure and temperature to obtain a composite material,

wherein the sintering pressure is applied before the temperature of the homogeneous mixture of the powders reaches the sinter reaction temperature of said mixture, in which the mixture is sintered at a temperature of approximately 2000°C, at a pressure of around 92 MPa for a period of approximately 1 hour.